

# ASM International Archaeometallurgy



## Technical Committee Newsletter

### What is Archaeometallurgy?

Archaeometallurgy embraces the history and development of metallurgy since people first started working native copper ten millennia ago. It is center on the study of the production and use of metals in human societies and extends to understanding the place of metals in past economies and belief systems. This is an interdisciplinary and intersects with all aspects of metallurgy, from the extractive to the physical, and with archeology and history, where they are treated as a continuum.

### Our Mission

As an ASM technical committee, we provide a venue for ASM members, to meet who work on the characterization and interpretation of **archaeological and historical metallic materials**, be they excavated, from museum collections, standing monuments or from industrial or maritime contexts.

### Key Objectives

- a) Provide a community for ASM members who study metallic objects from historical/archaeological sites.
- b) Help to develop best practices for characterization, preventative maintenance on historical infrastructure, linking historical contexts with manufacturing.
- c) Facilitate and encourage the preservation and documentation of legacy sample collections with associated compositional data and micrographs, location and conditions of access for reuse.
- d) Organize and host technical presentations on Archaeometallurgy topics for the IMAT conference.

### What's new?



Patricia Silvana Carrizo was recognized as the chair of the committee at the ASM Leadership Luncheon during the ASM IMAT conference held at New Orleans, LA, USA during 09/12/22 - 09/15/22.

## Welcome Letter from Professor Judy Todd



*Immediate Past President*  
ASM International

*Professor*  
Engineering Science and Mechanics  
Pennsylvania State University

## A heritage that provides a foundation for ASM's future

I am proud to announce the first newsletter from ASM's recently established Archaeometallurgy Committee and to invite all those with interests in archaeometals, archeomaterials, archaeometry (the application of the physical sciences to archaeological materials), and relevant archaeology, across the globe, to join this committee. This is a subject very dear to my heart as I conducted a year's Ph.D. fieldwork (1972-73), supervised by Jim Charles at Cambridge University, studying the 2000-year old bloomery Iron process still in practice at that time by the Deemay people of South-West Ethiopia

When I returned, I was immersed in a vibrant archaeometry community that included Cyril Stanley Smith and Heather Lechtman (MIT), Martha Goodway (the Smithsonian Institution, Washington D.C.), Ronnie Tylecote (Reader in Archaeometallurgy at the University of Newcastle and Honorary Professor at the Institute of Archaeology, University College London), Peter Northover (University of Oxford), and many archeomaterials and archaeology enthusiasts. At that time, ASM had a thriving "Historical Metallurgy Committee", which organized symposia at ASM's annual meetings through the 1970's to 2000's, following which a hiatus resulted due to senior leader commitments. I am excited and inspired to see the reinvigoration of our archaeometry community under the leadership of Silvana Carrizo, Peter Northover, Nassos Lazaridis, Scott Henry and their committee members.

ASM's materials heritage is our future. By understanding the technological developments that have advanced societies across the millennia, we lay a foundation for analyzing the impact of historic discoveries; understanding how our past charts our future; and providing a framework for evaluating discoveries not yet envisaged. We all have important roles and responsibilities in our spheres of influence to provide our wisdom to future generations. I urge all of you with interests in this field to reinvigorate our community and to advance the materials sciences that will benefit future humankind endeavors.

Call for abstracts!



**International Materials, Applications & Technologies 2023**  
**October 16–19, Detroit, Michigan, USA**

Special session on  
*Archaeometallurgy and Ancient Metalworking*

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Call for Abstracts

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**Session Organizers:**

*Prof. Patricia Silvana Carrizo*, Archaeometallurgy Area, Metallurgy Laboratory, National Technological University, Mendoza Regional Faculty, Argentina

*Dr. Omid Oudbashi*, Department of Conservation of Cultural and Historical Properties, Art University of Isfahan, Iran; Department of Scientific Research; Metropolitan Museum of Art, USA

This special session, sponsored by the ASM International Archaeometallurgy Committee, will feature presentations related to archaeometallurgy and the historical applications of metals and nonmetallic materials. Presentations will address studies of artifacts or objects from archaeological excavations, museums, monuments, private collections, public infrastructure projects, and other pieces that reflect historical materials applications. Talks reflecting results of analytical studies on archaeological and historical metallic and nonmetallic materials (slag, crucible, metallic ore) from different regions and various historic and prehistoric periods are invited. Papers related to studies that use modern characterization methods to determine details of past materials extraction, processing, and manufacturing methods are welcome.

The session is intended to serve as a forum for specialists (archaeologists, metallurgists, geologists, chemists, and archaeometrists) to share their recent findings in the field of archaeometallurgy and to network with others who are working in this field.

To learn more or to submit an abstract, visit

<https://www.asminternational.org/web/imat-2023/home>

Questions? Contact Scott Henry, (Scott.Henry@asminternational.org)

Call for abstracts!

# Early Railways 8

*8th International Conference on Early Railways*

*Darlington, 23-26 September 2025*



Image courtesy Darlington Borough Council

The 8th Early Railways Conference is the latest in a series that commenced in 1999

It is supported by National Railway Museum, Newcomen Society, The Stephenson Locomotive Society, Historical Metallurgy Society, Institution of Civil Engineers, Railway & Canal Historical Society

**Papers are invited for the forthcoming International Conference on Early Railways**

Expressions of interest September 2023

Synopses for referees September 2024

Draft papers June 2025 Papers are suggested on the following themes:

**The Stockton and Darlington Railway-its origins and significance in the development of railways, in the UK and elsewhere**

**The metallurgy of early railways and their locomotives**

**Medieval and early modern antecedents of the railway**

**Early Railways and construction**

**Early mainline railways**

**The Finance, construction and management of early railways**

**The personnel and leading protagonists in early (main line) railways**

**The role of early railways in society, literature and the arts**

*Papers on developments outside the UK are particularly welcome*

For expressions of interest and further information contact:

[www.earlyrailways.org.uk](http://www.earlyrailways.org.uk)

er8@rchs.org.uk



## Recent Publications

- 1) Gerhard Eggert, **Copper and Bronze in Art and the Search for Rare Corrosion Products**, *Heritage* 2023, 6(2), 1768-1784; <https://doi.org/10.3390/heritage6020094>
- 2) Marina Martínez-Weinbaum, Míriam Lozano-Carbó, Laura Maestro-Guijarro, Paula María Carmona-Quiroga, Mohamed Oujja and Marta Castillejo, **Comparison of the Use of Traditional Solvents and Nanosecond 213 nm Nd:YAG Laser in Thinning Naturally Aged Varnish on a Contemporary Oil Easel Painting**, *Heritage* (2023), <https://doi.org/10.3390/heritage6020053>
- 3) Oudbashi, O., Hessari, M., & Bahadori, S. **An archaeometallurgical study of Achaemenid copper-base artefacts from the Persepolis World Heritage Site, Iran.** *Journal of Cultural Heritage* (2022) <https://doi.org/10.1016/j.culher.2022.12.008>
- 4) D. Bournsnell, **Developing Early Iron Armour: the Development of Rolling as the Preferred Method of Manufacture Between 1854 and 1863**, *The International Journal for the History of Engineering and Technology* (2022), <https://doi.org/10.1080/00253359.2022.2084916>
- 5) Denis Prokuratov, Andrey Samokhvalov, Dmitry Pankin, Oleg Vereshchagin, Nikolai Kurganov, Anastasia Povolotckaia, Alexander Shimko, Alexandra Mikhailova, Roman Balmashnov, Anastasia Reveguk, Olga Smolyanskaya, Dmitry Redka and Vjaceslavs Bobrovs, **Investigation towards Laser Cleaning of Corrosion Products from Lead Objects**, *Heritage* (2022), <https://doi.org/10.3390/heritage6020071>
- 6) Evan Maina Maingi, María P. Alonso, Luis A. Angurel, German F. de la Fuente, Stéphan Dubernet, Rémy Chapoulie, Oriane Mellouët and Elodie Vally, **Chemical and Laser Cleaning of Corrosion Encrustations on Historical Stained Glass: A Comparative Study**, *Heritage* (2023), <https://doi.org/10.3390/heritage6020104>
- 7) Haubner, R., Strobl, S. **Investigations on Copper Cast Cakes, Sickle Fragments and a Spout Axe of the Hoard Find from Drassburg/Burgenland.** *Metallogr. Microstruct. Anal.* (2023). <https://doi.org/10.1007/s13632-023-00936-4>
- 8) Gyöngyösi, S., Szabó, G., Barkóczy, P. et al. **Metallographic Investigation of the Bronze Sword from Vértesszőlős.** *Metallogr. Microstruct. Anal.* (2023). <https://doi.org/10.1007/s13632-023-00937-3>
- 9) Abu-Baker, A.N. **A Technical Examination of the Corrosion and Microstructural Features of Copper Alloy Artifacts from the Byzantine Period at Khirbet Yajuz, Jordan.** *Metallogr. Microstruct. Anal.* (2023). <https://doi.org/10.1007/s13632-023-00934-6>
- 10) Albarède F, Desaulty A-M, Blichert-Toft J. **A geological perspective on the use of Pb isotopes in archaeometry.** *Archaeometry* (2012). <https://doi.org/10.1111/j.1475-4754.2011.00653.x>



## Members and Leaders

## Upcoming Events

### Officers

Chair: Patricia Silvana Carrizo

Vice Chair: David Sapiro

Secretary: Nassos Lazaridis

### Members

Nihad Ben Salah

Ho Lun Chan

Pankaj Mehrotra

Joseph Mitchell

Josh Mueller

Peter Northover

Omid Oudbashi

Elena Romanovskaia

Sambit Saha

### ASM Staff Liaison

Scott Henry

# NATIONAL MUSEUM of ASIAN ART



Smithsonian

Freer Gallery of Art

Arthur M. Sackler Gallery



### Forbes Symposium on Technical Studies of Asian Art

Dates: 06/09/2023 - 06/11/2023

Location: Meyer Auditorium, Washington DC, United States

Link: <https://asia.si.edu/research/conservation-scientific-research/science/forbes/>



### IMAT 2023 Conference & Exposition International Materials Applications & Technologies Conference and Exhibition

Dates: 10/16/2023 - 10/19/2023

Location: Huntington Place, Detroit MI, United States

Link: <https://www.asminternational.org/web/imat-2023>

If you are interested in joining the Committee, please contact Scott Henry @ [scott.henry@asminternational.org](mailto:scott.henry@asminternational.org)